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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,050	07/11/2003	Kiyoshi Miyazaki	NEL-533-US	3056
7590 09/13/2004			EXAMINER	
McGinn & Gibb, PLLC Suite 200 8321 Old Courthouse Road Vienna, VA 22182-3817			TRA, ANH QUAN	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. **10/617,050**

Applicant(s)

MIYAZAKI, KIYOSHI

Examiner

Quan Tra

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 4-8 and 12-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/11/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 11 is objected because there is no antecedent basis for the limitation “the rapid charging amplifier”. As best understood, the rapid charging amplifier is the rapid discharging amplifier.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (EP 1070980A1).

As to claim 1, Yamaguchi et al. discloses in figure 6 a voltage generating apparatus comprising: an input terminal (+N); an output terminal (OUT); a slow discharging amplifier (603, 606 and the capacitor in 106) connected between the input terminal and the output terminal; a rapid charging amplifier (602 and 605) connected between the input terminal and the output terminal; and a first offset voltage generating element (R2, R4, R6 or R8 in figure 2) connected between the input terminal and one of the slow discharging amplifier and the rapid charging amplifier, so that an input voltage applied to the slow discharging amplifier is higher than an input voltage applied to the rapid charging amplifier.

As to claim 3, figure 6 shows that the slow discharging amplifier comprises a first single-end output circuit (603 and 606) along with an oscillation avoiding capacitor (capacitor in 106),

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and the rapid charging amplifier comprises a second single-end output circuit (602 and 605) without an oscillation avoiding capacitor.

As to claim 9, Yamaguchi et al. discloses in figure 5 a voltage generating apparatus comprising: an input terminal (+N); an output terminal (OUT); a rapid discharging amplifier (503 and 506) connected between the input terminal and the output terminal; a slow charging amplifier (502, 505 and the capacitor in 105) connected between the input terminal and the output terminal; and a first offset voltage generating element (R2, R4, R6 or R8 in figure 2) connected between the input terminal and one of the rapid discharging amplifier and the slow charging amplifier, so that an input voltage applied so the rapid discharging amplifier is higher than an input voltage applied to the slow charging amplifier.

As to claim 11, figure 5 shows that the rapid discharging charging amplifier comprises a first single-end output circuit (503 and 506) without an oscillation avoiding capacitor, and the slow charging amplifier comprises a second single-end output circuit (502 and 505) along with an oscillation avoiding capacitor (the capacitor in 105).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al (EP 1070980) in view of Ikeda (JP 02150819).

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Yamaguchi et al.'s figure 6 shows all limitations of the claim except for a resistor connected between the slow discharging/charging amplifier and the output terminal. However, Ikeda's figure 8-11 shows a LCD voltage generating circuit having resistors R8-R11 in combination with capacitors connected between the outputs of drivers OP1-OP4 and the output nodes in order to stabilize the outputs voltages V1-V4. Therefore, it would have been obvious to one having ordinary skill in the art to add resistors in combination with capacitors respectively connected between Yamaguchi et al.'s drivers (103-104 in figure 1), wherein the structure of the drivers are shown in figure 5 and 6, and the output nodes for the purpose of stabilizing the output voltages V1-V4. Thus, the modified Yamaguchi et al.'s figures 6 and 5 further show resistor (the newly added resistor) connected between the slow discharging/charging amplifier and the output terminal.

Allowable Subject Matter

5. Claims 4-8 and 12-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 17 and 18 are allowed.

Claims 4-8 and 12-16 would be and claimed 17-18 are allowable because the prior art fails to teach or suggest a voltage generating circuit having a rapid discharge amplifier, a slow discharging amplifier and a rapid charging amplifier, in combination with first and second offset element, connected between the input terminal and output terminal; or a rapid discharging amplifier, a slow charging amplifier and a rapid charging amplifier, in combination with first and second offset elements, connected between the input terminal and the output terminal.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are cited as interest because they show some circuits analogous to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Quan Tra
Patent Examiner

September 8, 2004